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Biotechnology Notes

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Biotechnology Notes, a compilation of agency activities, news events, and upcoming meetings, is prepared for members of the U.S. Department of Agriculture's (USDA) Committee on Biotechnology in Agriculture (CBA) by USDA's Office of Agricultural Biotechnology (OAB).

INSIDE USDA

WHERE THERE'S A WIL(T) THERE'S A WAY

It's called tomato bacterial wilt, and some estimate the disease reduces annual worldwide tomato production by at least 29 percent. It is caused by bacterium *Pseudomonas solanacearum* in the soil and strikes tomatoes grown in warm, humid climates like the tropics and the southern U.S. There are many strains of the bacteria. The challenge for tomato researchers, says Iowa State University associate professor Bill Summers, is to develop large-fruited, bush type tomato plants that can resist multiple strains of bacterial wilt in any of the world's tropical climates. To help meet this challenge, Summers is studying new sources of genes for bacterial wilt resistance and how the genes are inherited. His research is supported in part by a grant from USDA's Cooperative State Research, Education and Extension Service.

In one project five tomato lines with bacterial wilt resistance were crossed with two lines that were adapted to high temperatures and humidity to produce 21 hybrids. "We found significant differences in how well the seven parents and their 21 hybrids resisted bacterial wilt strains," said Summers. "By analyzing these differences, we were able to identify some promising parents for future variety development."

In a related project, scientists compared the wilt resistance of 233 types of tomatoes in a Central American collection with seven commercial lines and found some wilt resistance genes in Panamanian tomato lines that equaled the level of resistance found in current commercial lines. Eventually, Summers hopes to identify one or more genes that can give plants resistance to many strains of the pathogen found in the tropics and then transfer the genes into a high-yielding dwarf tomato line. For more information, please call Bill Summers at 515-294-1978; Fax: 515-294-0730; E-mail: summers@IAState.edu

NEW BIOTECH BIBLIOGRAPHY RELEASED

USDA's National Agricultural Library (NAL) in Beltsville, MD has announced publication of *Biotechnology and Sustainable Agriculture: A Bibliography*, which lists 127 articles by

recognized authorities on the future of biotechnology in sustainable agriculture. The bibliography was produced jointly by NAL's Biotechnology Information Center (BIC) and the Alternative Farming Systems Information Center (AFSIC). The literature covers the impact of biotechnology on alternative pest control methods and the cultural and sociological changes that biotechnology could bring to agriculture. Articles are from the NAL AGRICOLA bibliographic database and are available in the NAL collection.

To obtain a copy of the bibliography, please send a self-addressed label with the request to either BIC or AFSIC, care of: NAL, USDA, 10301 Baltimore Blvd., Beltsville, MD 20705-2351.

APHIS ON THE MOVE

USDA's Animal and Plant Health Inspection Service (APHIS), Biotechnology, Biologics and Environmental Protection Division, takes up new digs in mid-February, a move originally scheduled for last month. Its new address will be 4700 River Road, Riverdale, Maryland 20737. The new telephone number will be 301-734-7602. The new fax number is, tentatively, 301-734-8669.

NEWS AROUND THE NATION (AND THE WORLD)

THE SALMON/SCIENCE CONNECTION

A genetically engineered salmon that grows 400-600 percent faster than traditional salmon has been developed by A/F Protein Inc., W. Newton, MA. Company president Elliot Entis says he is expanding the licensing of "Biogrow" salmon to aquaculture companies in Scotland, Canada, and Chile.

"As the world's oceans become fishing deserts, more pressure is put on aquaculture to supply our seafood protein," says Entis. To help fill the void, scientists Choy Hew and Garth Fletcher developed "Biogrow" salmon, which Entis says will increase aquaculture yields several-fold and lower unit costs by using the salmon's own growth hormones more efficiently. It should be available to consumers in 6 years. The company is also working on increasing growth rates in halibut and catfish as well as freeze resistance for salmon and other species. Another project focuses on increasing the natural disease resistance of fish to bacterial infection. For more details, please call Elliot Entis at 617-576-8153; Fax: 617-357-5548.

UK RELEASES; EC POLICY CHANGES

The United Kingdom (UK) has conducted 39 field releases since the Genetically Modified Organisms Regulations went into effect in 1993. Crop plants dominate the releases, including for the first time releases of maize and tobacco. Three releases were for microorganisms. The average turnaround time for applications remains at 55 days.

In related news, the European Community Deliberate Release Directive includes a provision for member states to use a simplified procedure when applying for a permit. The procedure makes it possible to submit in a single application a work outline covering the release of several types of genetically modified crops at several sites. The procedure also allows such applications to be made if certain details of later releases in the program, such as the location of all the intended sites of release, are not known at the time the application is made. For more details, please write to Department of the Environment, The Biotechnology Unit, Room B351 Romney House, 43 Marsham Street, London SW1P 3PY; or call 071-276-8187.

DROP BY DROP

Bovine somatotropin (BST) can be used for testing purposes, says European agricultural ministers and as reported in the January 1995 issue of the NBIAP Report. The ministers also extended the moratorium on the hormone's use and sale through 1999.

BIOTECHNOLOGY ON CAMPUS

This is the first in a series of articles profiling agricultural biotechnology programs at U.S. colleges and universities. We begin this month with Washington State University's Institute of Biological Chemistry.

The Institute was established in 1980 with the primary mission to pursue basic research in molecular biology and plant biochemistry. It was one of the first multidisciplinary programs in the nation spanning plant physiology, biochemistry, chemistry, botany, microbiology, and genetics/cell biology programs. Its main thrust is basic plant research with applications to agronomic and forestry biotechnology. Current areas of research include developmental and environmental regulation of terpenoid metabolism, the synthesis and regulation of phenylpropanoid metabolism, proteins involved in plant defense or storage, the elucidation of membrane and storage lipid synthesis, regulatory role of carbohydrates and lipids involved in cellular metabolism, and the development of novel techniques for plant gene transformation. During 1994, the Institute had eight faculty members, 58 postdoctorals and visiting scientists, 26 graduate students and 49 undergraduates. To learn more about the Institute, please call the Director, Norman Lewis, at 509-335-2682.

NEXT MONTH: The University of Wisconsin Biotechnology Center

SUMMER INTERN PROGRAM

The Biotechnology Industry Organization (BIO)-Capital Region is offering a summer biotech intern program to undergraduate and graduate students at accredited colleges and universities in Maryland, Virginia, and Washington, DC. (Applicants from schools in other regions who plan to be in the area over summer may also be accepted.) BIO is a trade association representing almost 600 biotechnology companies worldwide.

Each internship is designed to enhance the student's overall knowledge of biotechnology, primarily its research and development aspect. It will reinforce the student's knowledge of the biotechnology industry and its role in medicine, agriculture and other areas. Internships may include rotating assignments to several departments within a company. Each assignment would offer hands-on experience supervised by managers. The deadline for applications is March 3, 1995. For more details, please call 202-857-0244.

BIOTECH LECTURE SCHEDULED

Chuck Ludlam, Vice President of Government Relations of the Biotechnology Industry Organization, will discuss "Legislative Update of Federal Biotechnology Issues," February 14 from 3:30 to 5 p.m. at the ground floor conference room of the American Association for the Advancement of Science, 1333 H Street, N.W., Washington, DC. There is no charge for BIO members; non-members pay \$20 by check at the door. For more information, please call Joseph Zuccaro at 202-857-0244, ext. 231.

IN CASE YOU WEREN'T THERE

■ According to the December 1994 issue of *Genetic Engineering News*, the fastest growth in biotechnology in the next decade could be in agriculture, the environment, bioenergy, industrial enzymes, biobased industrial products, and specialty chemicals. Each area, however, has its hurdles be they regulatory, economic, or social. To address these and other issues, several hundred people attended a "Green Conference" in Washington, DC, January 12. The meeting was organized by *Genetic Engineering News* and the International Society for the Advancement of Biotechnology.

Experts discussed developing renewable fuels and turning waste into energy, pesticide reduction, public acceptance, intellectual property rights, product labeling, and consumer education. NASA Astronaut Mario Runco, Jr. gave the keynote luncheon speech on "Biotechnology and Space Research."

Speaking on Federal science and technology policies, Cathy Woteki of the Office of Science and Technology Policy, said the administration supports biotechnology and

recognizes its great potential to improve health, agriculture, and the environment. She emphasized the need to enhance public awareness and science education, especially at the K-12 level. Public education, she said, is the key to public acceptance of new technologies. She summarized President Clinton's policy objectives: maintain leadership in science and technology, link goals with needs, increase partnerships, produce good scientists, and improve science literacy. She also said a commitment to basic research and long-term investment were keys to successful programs.

Simon Best, CEO of Zeneca Plant Science in Wilmington, DE, talked about the "Second Green Revolution" which will produce smart genetics, smart biology, smart engineering, and smart chemistry. His vision for the future is to have an integrated crop production system which blends plant breeding and biotechnology.

Margaret Mellon, Union of Concerned Scientists, said biotechnology will not help to feed the world and that traditional plant breeding is a more efficient way to increase yield. She also emphasized that no single regulatory agency has oversight for genetically modified fish and that this void needs to be addressed.

NEW PUBLICATIONS

■ **ATCC Cell Lines and Hybridomas Reference Guide.** Published by the American Type Culture Collection. 1994. Rockville MD. For more details please call ATCC at 301-881-2600; Fax: 301-816-4367.

■ **"Reinventing the U.S. Department of Agriculture."** 1994 Annual Report of the Secretary of Agriculture. To receive a copy, please call 202-720-2798.

■ **Biotechnology and Sustainable Agriculture: A Bibliography.** Published by USDA's National Agricultural Library. Beltsville, MD. September 1994. To request a copy, please call 301-504-5947; Fax: 301-504-7098.

■ ***Journal of Marine Biotechnology.*** Published by Springer-Verlag. New York. To order, please call 1-800-SPRINGER.

■ **State-by-State Biotechnology Directory: Contacts, Centers and Companies.** Prepared by the Institute for Biotechnology Information, Research Triangle Park, NC. November 1994. For more details, please call 919-544-5111.

■ **"Agricultural Biotechnology: An Economic Perspective"** by M. Caswell, K. Fuglie, and C. Klotz. Published by USDA's Economic Research Service. May 1994. To order call 1-800-999-6779 or 1-703-834-0125 and ask for publication AER-687.

■ "The Dairy Debate." An educational interactive computer program. Developed for Macintosh computers. For details on ordering, please write to Dairy Diskette, SAREP, University of California, Davis, CA 95616.

■ ILRAD (International Laboratory for Research on Animal Diseases) Annual Report 1993/4. To receive a copy, please call 254-2-630-743; Fax: 254-2-631-499; E-mail: 157:CGI017

■ ATCC Cell Lines and Hybridomas Reference Guide. Published by the American Type Culture Collection. Rockville, MD. To order, call 301-881-2600; Fax: 301-816-4367.

UPCOMING MEETINGS

Feb. 6-9: Fourth Pacific Rim Biotechnology Conference. Melbourne, Australia. Contact Ian Prince, Dept. of Chemical Engineering, Monash University, Clayton, VIC. 3168, Australia; tel: 61-3-905-3449; Fax: 61-3-905-5686; E-mail: ian.prince@eng.monash.edu.au

Feb. 19-23: Seventh European Congress on Biotechnology. Nice, France. Call 33-1-4555-6946; Fax: 33-1-4555-4033.

Feb. 22-24: Science and Technology Policy: 1995 and Beyond. Washington, DC. Sponsored by New Technology Week. To register, please call 202-662-9710; Fax: 202-662-9719.

March 6-7: "Food Policies for the 21st Century: Putting the Consumer First." Washington, DC. Sponsored by Public Voice for Food and Health Policy in Cooperation with the National Food Processors Association. For more details, please call Alison Weiss at 202-371-1840; Fax: 202-371-1910.

March 13-17: Protein Biotechnology--Production, Clarification, Characterization and Stabilization. Amersfoort, The Netherlands. For details please write to A. W. Schram, BioUpdate Foundation, P.O. Box 3045, 1400 EA Bussum, The Netherlands or send a fax to 31-2159-33910.

March 17-23: Toward the Genetic Manipulation of Insects. Tamarron, Colorado. Sponsored by Keystone Symposia. Call 303-262-1230; Fax: 303-262-1525.

March 29-April 4: Signal Transduction in Plants. Hilton Head, SC. Sponsored by Keystone Symposia. For details call 303-262-1230; Fax: 303-262-1525.

April 3-6: International Symposium on Weed and Crop Resistance to Herbicides, University of Cordoba, Spain. Call Jesus Jorin at 57-218439.

May 14-17: "Biotechnology's Role in the Genetic Improvement of Farm Animals." Beltsville, MD. Sponsored by USDA's Agricultural Research Service. For more details, please call Virginia Hupfer at 301-504-6108; Fax: 301-504-6357.

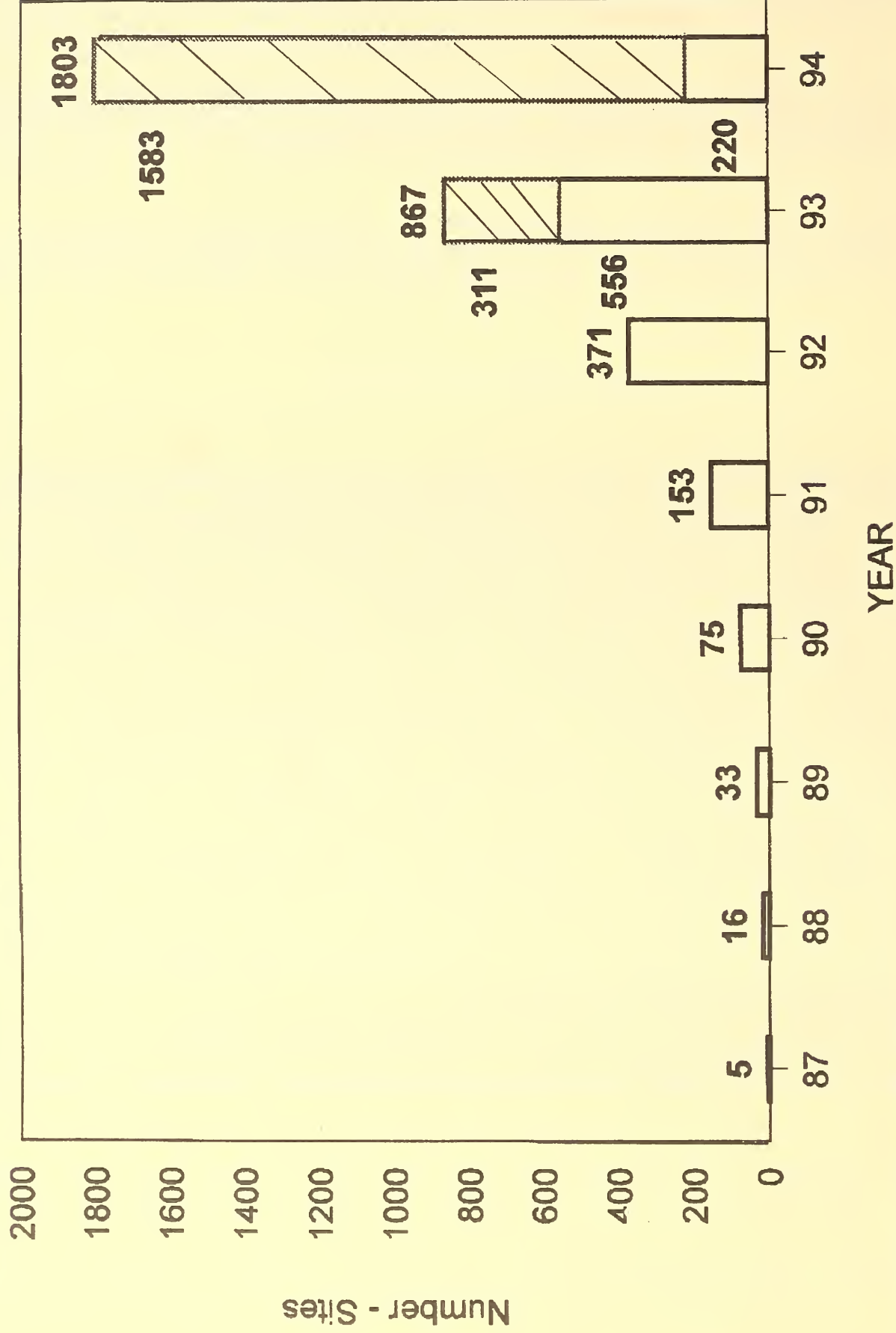
June 23-26: "8th International Symposium on Staphylococci and Staphylococcal Infections." Aix-Les-Bains, France. For details, please call 33-1-4568-8179; Fax: 33-1-45-6746-98.

Biotechnology Notes is written by Marti Asner, public affairs specialist in USDA's Office of Agricultural Biotechnology. Any comments or suggestions may be sent to USDA/OAB, Room 1001, Rosslyn Plaza-E, 14th and Independence Ave., S.W., Washington, DC 20250-2200. Telephone: 703-235-4419; Fax: 703-235-4429; e-mail: masner@csrs.esusda.gov. This news publication is also accessible on Internet via Gopher.

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